



PUBLICATION COUNTRY	(10):	JP
DOCUMENT NUMBER	(11):	06-143597
DOCUMENT KIND	(12):	A
	(13):	PUBLISHED UNEXAMINED PATENT APPLICATION (Kokai)
PUBLICATION DATE	(43):	1994-05-24
APPLICATION NUMBER	(21):	04-328521
APPLICATION DATE	(22):	1992-11-13
INTERNATIONAL CLASSIFICATION	(51):	B 41 J 2/165; B 41 J 3/04
DOMESTIC CLASSIFICATION	(52):	
PRIORITY COUNTRY	(33):	
PRIORITY NUMBER	(31):	
PRIORITY DATE	(32):	
INVENTOR	(72):	Sasaki Tetsu
APPLICANT	(71):	Rikoo K.K.
AGENT	(74):	Nakato Yoshiaki (Patent Attorney)
TITLE	(54):	A RECORDING HEAD CLEANER
FOREIGN TITLE	(54A):	Kiroku heddo no heddomen seijoo soochi

(54) [Title of the Invention]

**A RECRODING HEAD CLEANER**

(57) [Abstract]

[Purpose]

To completely absorb ink adhering to a wiper and leave no traces after the wiper cleans the head surface to an inkjet recorder's recording head.

[Constitution]

Slider (24), supported by frame (21), is set up to move freely back and forth in a printer's non-recording domain. While fixed convex section (24c) is stood up on slider (24)'s surface, and wiper (27) is set to come into contact with one side thereof, toothed section (24b) is provided to the bottom to mesh with pinion (25). Pulse motor (26)'s motor gear (26a) meshes with pinion (25). Together with providing ink absorbing member (34) (supported by holder (33)) frontwards to wiper (27) in its back and forth moving direction, its ink absorbing surface (34a) is set parallel to the movements of wiper (27). Wiper (27) moves, cleaning head surface (14a) to recording head (14); as wiper (27) rubs against ink absorbing surface (34) after cleaning, ink adhering thereto (27) is absorbed.

[Claims]

[Claim 1]

A recording head cleaner comprising a wiper moving back and forth cleaning a recording head's head surface; the wiper rubs against an ink absorbing member after cleaning; the ink absorbing surface, against which the wiper rubs thereafter, is positioned in the direction of the wiper's back and forth movement, relative to the recording head cleaner that absorbs ink adhering to the wiper on its ink absorbing surface.

[Claim 2]

The recording head cleaner mentioned in Claim 1 comprising as well the wiper attached to a slider; the slider rack meshes with the pinion, the pinion is made to rotate by a driving source, moving the slider back and forth, and the wiper is moved back and forth in a straight line.

[Detailed Explanation of The Invention]

[0001] [Industrial Field of Application]

The present invention pertains to a recording head cleaner. Applicable to a recording head for an inkjet printer recording on a sheet of paper, ink is sprayed therefrom while a sheet of paper is being fed [through]. More precisely, in an inkjet recorder a wiper moves back and forth cleaning the recording head surface. The wiper makes contact with an ink absorbing member after cleaning, and ink adhering to the wiper is absorbed by the ink

absorbing surface.

[0002] [Prior Art]

Formerly, with this type of head cleaner, wiper (2) was fixed to the tip of revolving lever (1), as illustrated in Figure 8. As revolving lever (1) rotated, it moved wiper (2), wiping recording head (3)'s head surface (3a), and cleaning it by removing ink adhering thereto (3a).

[0003]

When recording head (3)'s head surface (3a) was wiped by wiper (2), ink (a) adhered to it (2), as shown in Figure 9. When wiper (2), to which ink adhered, again wiped head surface (3a), as illustrated in Figure 10, it produced a thread-like wiping trace (4) dragged across the head surface (3a), as shown in Figure 11.

[0004]

To remove this wiping trace in other past head cleaners wiper (2) was fixed to the tip of revolving lever (1), as noted in Figure 12, and ink absorbing surface (5a) in ink absorbing member (5) was positioned at a right angle to the moving direction thereof (2). When head surface (3a) was cleaned, revolving lever (1) rotated, wiper (2) moved, and recording head (3)'s head surface (3a) was wiped. Afterwards, wiper (2) was pushed against ink absorbing surface (5a), and ink adhering to wiper (2) was absorbed while contacting surface (5a) in a static

state.

[0005] [Problems that the Invention is to Solve]

There was this problem with past devices, however. Because ink adhering to wiper (2) was absorbed as it touched ink absorbing surface (5a) in a static state, the ink absorption rate thereof (5a) was poor, and the ink could not be completely absorbed.

[0006]

The present invention has as its objectives to completely absorb ink adhering to the wiper and leave no traces after it cleans the head surface to an inkjet recorder's recording head.

[0007] [Means of Solving the Problems]

The present invention, as shown in the following illustrated working example, for instance, has a wiper (27) moving back and forth cleaning a recording head (14)'s head surface (14a); wiper (27) rubs against an ink absorbing member (34) after cleaning; ink absorbing surface (34a), against which wiper (27) afterwards rubs, is positioned in the direction of the wiper's back and forth movement, relative to recording head (14)'s cleaner (20) that absorbs on its ink absorbing surface (34a) ink adhering to wiper (27).

[0008]

The device mentioned in Claim 2, as shown in the following illustrated working example, has, relative to recording head

(14)'s head surface cleaner (20), wiper (27) fitted to slider (24); slider (24)'s toothed section (24b) meshes with pinion (25), pinion (25) is made to rotate by a driving source, moving slider (24) back and forth, and wiper (27) is moved back and forth in a straight line.

[0009] [Operation of the Invention]

Wiper (27) moves back and forth when cleaning recording head (14)'s head surface (14a). Together with cleaning ink adhering thereto (14a) whenever it cleans, wiper (27) thereafter rubs against ink absorbing member (34)'s ink absorbing surface (34a), which absorbs ink adhering to wiper (27).

[0010]

In regard to what is mentioned in Claim 2, a driving source conveys rotation to pinion (25) when cleaning head surface (14a). Accompanying the rotation of pinion (25), slider (24) moves back and forth through the meshing of toothed section (24b) with pinion (25), and wiper (27) moves back and forth in a straight line.

[0011] [Working Examples]

A working example of the present invention is explained below referencing the drawings. Figure 4 indicates a structural summary view of an inkjet printer provided with a recording head cleaner.

[0012]

Throughout the drawing number (10) represents the printer body's sides. Platen (11) is installed over to side (10) to rotate freely. Guide shaft (12) also spans side (10) parallel to platen (11). Carriage (13) is set up on guide shaft (12) to freely run back and forth within the limits of recording domain A and non-recording domain B. Recording head (14) is carried on carriage (13).

[0013]

Carriage (13) is moved from a full line position to a two dot chain line position when recording. It (13) moves back and forth along platen (11) in recording domain A as platen (11) rotates; while sheet (S) is set on platen (11) and fed through [the printer], ink is sprayed from head surface (14a) in recording head (14) facing sheet (S), and [characters] are recorded on (S).

[0014]

When recording is completed, carriage (13) returns to the full line position. When not recording it (13) stands by in non-recording domain B.

[0015]

As indicated in Figures 1 and 2, the present invention's recording head cleaner (20) is prepared [to operate] in non-recording domain B. Head cleaner (20) is supported on frame



(22), slider (24) is set to freely move back and forth. Frame (22) provides a pair of sides with a space opened between them, forming opposing joined concave section (22a), as shown in Figure 2. Slider (24)'s doubled-sided section (24a) is joined with concave section (22a), and the slider (24) is held able to move back and forth orthogonally to the back and forth movement of carriage (13).

[0016]

Slider (24) is provided with toothed section (24b) on its bottom length from its center to its right [end] (Figure 1), and fixed convex section (24c) is set near the center of its (24) upper surface length, facing upwards. Pinion (25) meshes with toothed section (24b), and motor gear (26a) on pulse motor (26) is formed to mesh with pinion (25). Flat plate-shaped wiper (27) is pushed up against the right side of fixed convex section (24c) (Figure 1) with vertical section (28b) of L-sectioned ink absorber (28) backing it. Horizontal section (28a) of ink absorber (28) is set to run on the upper surface of slider (24). Wiper (27) and ink absorber (28) are maintained inserted between fixed convex section (24c) and holder plate (29).

[0017]

Ink absorbing member (34) is held by holder (33) and positioned forward to the direction of wiper (27)'s back and forth movements. As indicated in Figure 3, holder (33) is shaped

like a compressed box with insertion aperture (33a) provided to one of its surfaces. Multiple open pores (33b...) are arrayed on its upper surface with notch (33c) formed and remaining in a frame shape on three sides along the bottom. Ink absorbing member (34) is inserted from insertion aperture (33a) into holder (33), and (in the drawing) the bottom surface of ink absorbing surface (34a) is exposed by notch (33c). As indicated in Figure 1, holder (33) is suitably held in non-recording domain B, and ink absorber (34)'s ink absorbing surface (34a) is formed positioned parallel to the direction of the back and forth movement of wiper (27).

[0018]

Recording head (14) is appropriately moved to the cleaning position in non-recording domain B, when head surface (14a) thereof (14) is cleaned by head cleaner (20); pulse motor (26) is driven. Next, as indicated in Figure 1, pinion (25) is rotated in the direction of arrow L through motor gear (26a). Slider (24) moves horizontally in the direction of arrow C, and wiper (27) moves in a straight line from the indicated cleaning stand by position. The upper edge of wiper (27) bends, pushing against head surface (14a) (Figure 5), and rubs against one side of the cleaning surface (27a), wiping off ink adhering thereto (14a). The other side of the cleaning surface (27b) then makes contact with ink absorber (28), which absorbs therefrom (27b) ink

adhering to it. Next, after cleaning head surface (14a), cleaned wiper (27) presses against ink absorber member (34), and the upper edges bends. As shown in Figure 6, as one side of the cleaning surface (27a) rubs against ink absorbing surface (34a), consequent to the movement of wiper (27), ink adhering thereto (27a) is absorbed thereat (34a).

[0019]

Afterwards (Figure 7), pulse motor (27) counter-rotates pinion (25) in direction R, moving slider (24) in direction D. Wiper (27)'s [direction] is then reversed, the other side of the cleaning surface (27b) rubs against ink absorbing surface (34a), and ink adhering thereto (27b) is absorbed. When wiper (27) goes through this double action head surface (14a) again rubs against the other side of the cleaning surface (27b) and is cleaned; [wiper (27)] moves to the cleaning stand by position shown in Figure 1, and stands ready.

[0020]

The absorbed ink fluid evaporates passing through open pores (33b-), hastening the drying of ink absorbing member (34).

[0021]

With this working example wiper (27) moves back and forth and cleans head surface (14a). Wiper (27) may also be constituted to perform its back and forth motion a number of times.

[0022] [Effects of the Invention]

In accord with the present invention the wiper rubs against the ink absorber member's ink absorbing surface after cleaning, and ink adhering to the wiper is absorbed. Consequently, the ink can be highly efficiently absorbed. Even should there be a great amount of ink adhering to the wiper it can be completely absorbed with no traces remaining. For this reason wiping traces of ink are not produced on the recording head surface, and the head surface can always be cleaned.

[Brief Explanation of the Drawings]

[Figure 1] Structural view illustrating one working example of the head cleaner to the recording head in the present invention; the wiper is in a cleaning stand-by position state.

[Figure 2] Longitudinal section in Figure 1 viewed from the direction of the I-I line.

[Figure 3] Perspective of the holder holding the ink absorber member.

[Figure 4] Structural summary view of an inkjet printer provided with the recording head cleaner.

[Figure 5] Phase drawing illustrating the cleaning state of the head surface in the head cleaner.

[Figure 6] Phase drawing illustrating the absorbing state of ink adhering to the wiper after cleaning.

[Figure 7] Phase drawing illustrating the state of the

wiper returning to its cleaning stand-by position.

[Figure 8] Phase drawing illustrating the state in which the head surface is cleaned by prior head cleaners.

[Figure 9] Phase drawing illustrating the state in which ink adheres to the wiper after cleaning the head.

[Figure 10] Phase drawing illustrating the state in which the head surface is cleaned by the wiper to which ink adheres.

[Figure 11] Phase drawing illustrating the state of a contaminated head surface after being cleaned by the wiper in Figure 10.

[Figure 12] Phase drawing illustrating the state in which a head surface is cleaned by another prior head cleaner.

[Explanation of Reference Numerals]

1... Revolving lever; 2, 27... Wiper; 3, 14... Recording head; 3a, 14a... Recording head surface; 4... Wiping trace; 5, 34... Ink absorber member; 5a, 34a... Ink absorbing surface; 10... Printer body side; 11... Platen; 12... Guide shaft; 13... Carriage; 20... Head cleaner; 21, 22... Frame; 22a... Joined concave section; 24... Slider; 24a... Double-sided section; 24b... Toothed section; 24c... Fixed convex section; 25... Pinion; 26... Pulse motor; 26a... Motor gear; 27a... One side of the cleaning surface; 27b... Other side of the cleaning surface; 28... Ink absorber; 28a... Horizontal section; 28b... Vertical

section; 29... Holder plate; 30...; 31...; 32... ; 33... Holder;  
33a... Insertion aperture; 33b... Open pores; 33c... Notch; a...  
Ink; A... Recording domain; B... Non-recording domain; C, D, L,  
R... Directional arrow; 1-1... I-I line; S... Sheet of paper.

[Figure 1] Structural view illustrating one working example of the head cleaner to the recording head in the present invention; the wiper is in a cleaning stand-by position state  
Key: 14... Recording head; 14a... Recording head surface; 20... Head cleaner; 22... Frame; 24... Slider; 24b... Toothed section; 24c... Fixed convex section; 25... Pinion; 26... Pulse motor; 26a... Motor gear; 27... Wiper; 28... Ink absorber; 28a... Horizontal section; 28b... Vertical section; 29... Holder plate; 33... Holder; 33c... Notch; 34... Ink absorber member; 34a... Ink absorbing surface; C, L... Directional arrow; 1-1(=I-I)) I-I line.

[Figure 2] Longitudinal section in Figure 1 viewed from the direction of the I-I line  
Key: 20... Head cleaner; 22... Frame; 22a... Joined concave section; 24... Slider; 24a... Double-sided section; 24b... Toothed section; 24c... Fixed convex section; 25... Pinion; 27... Wiper; 33... Holder; 34... Ink absorber member; 34a... Ink absorbing surface.

[Figure 3] Perspective of the holder holding the ink absorber member  
Key: 33... Holder; 33a... Insertion aperture; 33b... Open pores; 33c... Notch; 34... Ink absorber member; 34a Ink absorbing surface.

[Figure 4] Structural summary view of an inkjet printer provided with the recording head cleaner  
Key: 10... Printer body side; 11... Platen; 12... Guide shaft; 13... Carriage; 14... Recording head; 14a... Recording head surface; A... Recording domain; B... Non-recording domain; S... Sheet of paper.

[Figure 5] Phase drawing illustrating the cleaning state of the head surface in the head cleaner  
Key: 14... Recording head; 14a... Recording head surface; 24c... Fixed convex section; 27... Wiper; 27a... One side of the cleaning surface; 27b... Other side of the cleaning surface; 28 Ink absorber.

[Figure 6] Phase drawing illustrating the absorbing state of ink adhering to the wiper after cleaning

Key: 14... Recording head; 14a... Recording head surface; 20... Head cleaner; 22... Frame; 24... Slider; 27... Wiper; 27a... One side of the cleaning surface; 28... Ink absorber; 29... Holder plate; 33... Holder; 34... Ink absorber member; 34a... Ink absorbing surface.

[Figure 7] Phase drawing illustrating the state of the wiper returning to its cleaning stand-by position

Key: 14... Recording head; 14a... Recording head surface; 22... Frame; 24... Slider; 25... Pinion; 26... Pulse motor; 26a... Motor gear; 27a... One side of the cleaning surface; 27b... Other side of the cleaning surface; 28... Ink absorber; 29... Holder plate; 33... Holder; 34... Ink absorber member; 34a... Ink absorbing surface; D, R... Directional arrow.

[Figure 8] Phase drawing illustrating the state in which the head surface is cleaned by prior head cleaners

Key: 1... Revolving lever; 2... Wiper; 3... Recording head; 3a... Recording head surface.

[Figure 9] Phase drawing illustrating the state in which ink adheres to the wiper after cleaning the head

Key: 2... Wiper; a... Ink.

[Figure 10] Phase drawing illustrating the state in which the head surface is cleaned by the wiper to which ink adheres

Key: 2... Wiper; 3... Recording head; 3a... Recording head surface; a... Ink.

[Figure 11] Phase drawing illustrating the state of a contaminated head surface after being cleaned by the wiper in Figure 10

Key: 3... Recording head; 3a... Recording head surface; 4... Wiping trace.

[Figure 12] Phase drawing illustrating the state in which a head surface is cleaned by another prior head cleaner

Key: 1... Revolving lever; 2... Wiper; 3... Recording head; 3a... Recording head surface; 5... Ink absorber member; 5a... Ink absorbing surface.

(19)日本国特許庁(J P)

(12) 公開特許公報(A)

(11)特許出願公開番号

特開平6-143597

(43)公開日 平成6年(1994)5月24日

(51)Int.Cl.<sup>5</sup>

識別記号

庁内整理番号

F I

技術表示箇所

B 4 1 J 2/165

8306-2C

B 4 1 J 3/ 04

1 0 2 H

審査請求 未請求 請求項の数 2(全 4 頁)

(21)出願番号

特願平4-328521

(22)出願日

平成4年(1992)11月13日

(71)出願人 000006747

株式会社リコー

東京都大田区中馬込1丁目3番6号

(72)発明者 佐々木 徹

東京都大田区中馬込1丁目3番6号 株式

会社リコー内

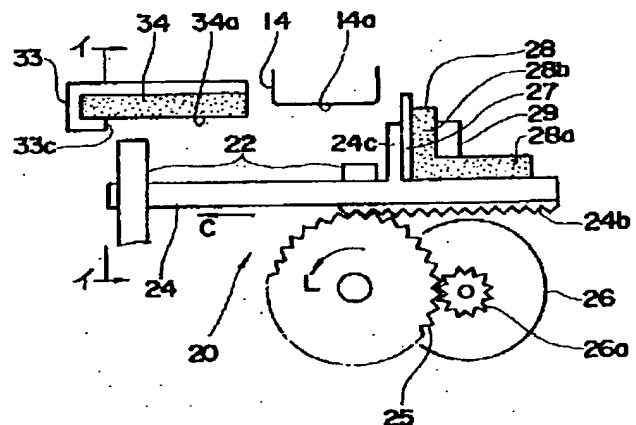
(74)代理人 弁理士 中尾 俊介

(54)【発明の名称】 記録ヘッドのヘッド面清掃装置

(57)【要約】

【目的】 インクジェット記録装置の記録ヘッドのヘッド面をワイバで清掃後、そのワイバに付着したインクを残すことなく完全に吸収することにある。

【構成】 プリンタ本体の非記録領域に、フレーム21で支持してスライダ24を往復動自在に設ける。そのスライダ24は、上面に取付凸部24cを立ち上げ、その一側に接してワイバ27を取り付けるとともに、下面に歯部24bを設けてピニオン25にかみ合わせる。そのピニオン25には、パルスモータ26のモータギヤ26aをかみ合わせる。一方、ワイバ27の往復動方向前方には、ホルダ33で支持してインク吸収部材34を設けるとともに、そのインク吸収面34aをワイバ27の移動方向と平行に配置する。そして、ワイバ27を移動して記録ヘッド14のヘッド面14aを清掃し、清掃後のワイバ27をインク吸収面34aに摺接しながらワイバ27に付着したインクを吸収する。





## 【特許請求の範囲】

【請求項1】 ワイバを往復動してそれで記録ヘッドのヘッド面を清掃し、清掃後の前記ワイバをインク吸収部材に接触してそのインク吸収面でそのワイバに付着したインクを吸収する記録ヘッドのヘッド面清掃装置において、前記ワイバの往復動方向に、清掃後の前記ワイバが摺接する前記インク吸収面を配置してなる、記録ヘッドのヘッド面清掃装置。

【請求項2】 前記ワイバをスライダに取り付け、そのスライダのラックをピニオンに噛みあわせ、そのピニオンに駆動源からの回転を伝達して前記スライダを往復動し、前記ワイバを直線往復動してなる、請求項1に記載の記録ヘッドのヘッド面清掃装置。

## 【発明の詳細な説明】

## 【0001】

【産業上の利用分野】この発明は、シートを搬送しながら記録ヘッドからインクを噴射してそのシート上に記録を行うインクジェットプリンタ等のインクジェット記録装置に適用しうる。詳しくは、そのようなインクジェット記録装置において、ワイバを往復動して記録ヘッドのヘッド面を清掃し、清掃後のワイバをインク吸収部材に接触してそのインク吸収面でワイバに付着したインクを吸収する記録ヘッドのヘッド面清掃装置に関する。

## 【0002】

【従来の技術】従来、この種のヘッド面清掃装置では、たとえば図8に示すように、回動レバー1の先端にワイバ2を取り付け、その回動レバー1を回動しワイバ2を移動して記録ヘッド3のヘッド面3aを拭き、そのヘッド面3aに付着したインクを除去して清掃していた。

【0003】ところで、記録ヘッド3のヘッド面3aをワイバ2で拭くと、図9に示すように、そのワイバ2にインクaが付着する。そして、図10に示すように、インクが付着したワイバ2で再びヘッド面3aを拭くと、図11に示すとおり、ヘッド面3aに糸を引いたような拭き残し部分4が発生する。

【0004】そこで、このような拭き残し部分を無くすために、従来の他のヘッド面清掃装置の中には、図12に記すように、回動レバー1の先端にワイバ2を取り付けるとともに、そのワイバ2の移動方向と直角にインク吸収部材5のインク吸収面5aを配置する構成としたものがある。そして、ヘッド面3aを清掃するとき、回動レバー1を回動しワイバ2を移動して記録ヘッド3のヘッド面3aを拭いた後、そのワイバ2をインク吸収面5aに押し当て、静止状態で接触してそのワイバ2に付着したインクを吸収していた。

## 【0005】

【発明が解決しようとする課題】しかしながら、この従来のものでは、インク吸収面5aにワイバ2を静止状態で接触して該ワイバ2に付着したインクを吸収するので、インク吸収面5aのインク吸収率が悪く、インクを

完全に吸収できない問題があった。

【0006】そこで、この発明の目的は、インクジェット記録装置の記録ヘッドのヘッド面をワイバで清掃後、そのワイバに付着したインクを残すことなく完全に吸収することにある。

## 【0007】

【課題を解決するための手段】そのため、この発明は、たとえば以下の図示実施例に示すとおり、ワイバ27を往復動してそれで記録ヘッド14のヘッド面14aを清掃し、清掃後の前記ワイバ27をインク吸収部材34に接触してそのインク吸収面34aでそのワイバ27に付着したインクを吸収する記録ヘッド14のヘッド面清掃装置20において、前記ワイバ27の往復動方向に、清掃後の前記ワイバ27が摺接する前記インク吸収面34aを配置してなることを特徴とする。

【0008】請求項2に記載のものは、たとえば以下の図示実施例に示すとおり、請求項1に記載の記録ヘッド14のヘッド面清掃装置20において、前記ワイバ27をスライダ24に取り付け、そのスライダ24の歯部24bをピニオン25に噛みあわせ、そのピニオン25に駆動源からの回転を伝達して前記スライダ24を往復動し、前記ワイバ27を直線往復動してなることを特徴とする。

## 【0009】

【作用】そして、記録ヘッド14のヘッド面14aを清掃するとき、ワイバ27を往復動してヘッド面14aに付着したインクを清掃するとともに、その清掃の度、清掃後のワイバ27をインク吸収部材34のインク吸収面34aに摺接してワイバ27に付着したインクを吸収する。

【0010】請求項2に記載のものでは、そのヘッド面14aの清掃時、駆動源からの回転をピニオン25に伝え、そのピニオン25を回転するとともにそれと歯部24bとのかみ合いを介してスライダ24を往復動し、ワイバ27を直線往復動する。

## 【0011】

【実施例】以下、図面を参照しつつ、この発明の実施例を説明する。図4には、この発明の一実施例である記録ヘッドのヘッド面清掃装置を備えるインクジェットプリンタの概要構成を示す。

【0012】図中符号10は、プリンタ本体の側板である。その側板10には、プラテン11を回転自在に掛け渡す。また、プラテン11と平行にガイドシャフト12を側板10に掛け渡す。そのガイドシャフト12上には、記録領域Aと非記録領域Bの範囲内でキャリッジ13を往復移動自在に取り付け、そのキャリッジ13に記録ヘッド14を搭載してなる。

【0013】しかし、記録を行うとき、キャリッジ13を実線位置から2点鎖線位置へと移動する。そして、記録領域A内でプラテン11に沿ってキャリッジ13を

往復動するとともに、プラテン11を回転してそれにセットしたシートSを搬送しながら、そのシートSに向け記録ヘッド14のヘッド面14aからインクを噴射してシートS上に記録を行う。

【0014】一方、記録を終了したときは、キャリッジ13を実線位置へ戻す。そして、非記録時、非記録領域B内で待機する。

【0015】ところで、その非記録領域Bには、図1および図2に示すように、この発明の記録ヘッドのヘッド面清掃装置20を備える。そのヘッド面清掃装置20は、フレーム22で支持してスライダ24を往復動自在に設ける。すなわち、フレーム22は、図2に示すように、間隔をあけて一対設け、対向する係合凹部22aを形成する。そして、それら係合凹部22aにスライダ24の両側部24aを係合して該スライダ24を前記キャリッジ13の往復動と直交する方向に往復動可能に保持する。

【0016】そのスライダ24は、下面の長さ方向中央から図1中右よりに歯部24bを設けるとともに、上面の長さ方向ほぼ中央に取付凸部24cを上向きに設ける。そして、歯部24bにピニオン25をかみ合わせ、そのピニオン25にパルスモータ26のモータギヤ26aをかみ合わせてなる。また、前記取付凸部24cには、図1中右側に平板状のワイバ27を押し当てるとともに、断面L形のインク吸収体28の垂直部28bを裏当てする。そのインク吸収体28の水平部28aは、スライダ24の上面に乗せて設ける。そして、これらワイバ27およびインク吸収体28を取付凸部24cとホルダプレート29間で挟んで支持する。

【0017】一方、前記ワイバ27の往復動方向前方には、ホルダ33で支持してインク吸収部材34を配置する。そのホルダ33は、図3に示すように、扁平箱型状で、一側面に挿入口33aを設け、上面に複数の通気孔33b………を設けるとともに、下面に3辺を枠状に残す切欠き33cを設けてなる。そして、該ホルダ33内に挿入口33aからインク吸収部材34を挿入し、図中下面のインク吸収面34aを切欠き33cから露出して設ける。そうして、該ホルダ33を前記非記録領域B内に適宜支持し、図1に示すように、インク吸収部材34のインク吸収面34aを前記ワイバ27の往復動方向と平行に配置してなる。

【0018】しかして、このヘッド面清掃装置20で記録ヘッド14のヘッド面14aを清掃するときは、記録ヘッド14を適宜前記非記録領域Bの清掃位置へと移動し、パルスモータ26を駆動する。それから、図1に示すように、モータギヤ26aを介してピニオン25を矢印L方向に回転する。すると、スライダ24が矢印C方向に水平移動し、図示する清掃待機位置からワイバ27が直線移動する。そして、ワイバ27の上端がヘッド面14aに押し当って撓み、図5に示すように、一側清掃

面27aで擦ってヘッド面14aに付着したインクを拭き取る。そのとき、他側清掃面27bがインク吸収体28の上端に接触し、該他側清掃面27bに付着するインクを吸収する。そして、ヘッド面14aの清掃後に続いて、その清掃後のワイバ27がインク吸収部材34に押し当り、上端が撓む。そうして、図6に示すように、ワイバ27の移動にともないその一側清掃面27aをインク吸収面34aに摺接しながら該インク吸収面34aで一側清掃面27aに付着するインクを吸収する。

【0019】その後、図7に示すように、パルスモータ26でピニオン25をR方向に逆回転してスライダ24をD方向に移動する。そのとき、ワイバ27が反転して他側清掃面27bをインク吸収面34aに摺接し、該他側清掃面27bに付着するインクを吸収する。そして、ワイバ27の復動時、きれいにした他側清掃面27bでヘッド面14aを再び擦って清掃し、図1に示す清掃待機位置へと移動して待機する。

【0020】ところで、吸収したインク水分は、前記通気孔33b………を通して蒸発し、インク吸収部材34の乾燥を早める。

【0021】なお、上述した実施例では、清掃時に、ワイバ27を一往復動してヘッド面14aを清掃した。しかし、前記ワイバ27は、往復動を数回行う構成としてもよい。

#### 【0022】

【発明の効果】したがって、この発明によれば、インク吸収材のインク吸収面に清掃後のワイバを摺接して該ワイバに付着したインクを吸収するので、そのインクを効率よく吸収することができ、ワイバに付着したインクの量が多くても残すことなく完全に吸収することができる。これにより、記録ヘッド面にインクの拭き残しを発生させることなく、該ヘッド面を常にきれいに清掃することができる。

#### 【図面の簡単な説明】

【図1】この発明の一実施例である記録ヘッドのヘッド面清掃装置を、そのワイバが清掃待機位置にある状態において示す構成図である。

【図2】図1中、イーイ線方向からみた縦断面図である。

【図3】そのインク吸収部材を保持したホルダの斜視図である。

【図4】そのヘッド面清掃装置を備えるインクジェットプリンタの概要構成図である。

【図5】そのヘッド面清掃装置におけるヘッド面の清掃状態を示す状態説明図である。

【図6】その清掃後、ワイバに付着しているインクを吸収する状態を示す状態説明図である。

【図7】そのインクの吸収後、ワイバを清掃待機位置へ戻す状態を示す状態説明図である。

【図8】従来の記録ヘッドのヘッド面清掃装置によって

5

6

ヘッド面を清掃する状態を示す状態説明図である。

【図9】そのヘッド面の清掃後、ワイバにインクが付着した状態を示す状態説明図である。

【図10】そのインクが付着したワイバでヘッド面を清掃する状態を示す状態説明図である。

【図11】そのワイバで清掃した後のヘッド面の汚れ状態を示す状態説明図である。

【図12】従来の他のヘッド面清掃装置によってヘッド面を清掃する状態を示す状態説明図である。

【符号の説明】

10

14 記録ヘッド

14a 記録ヘッドのヘッド面

20 ヘッド面清掃装置

24 スライダ

24b 歯部

25 ビニオン

27 ワイバ

34 インク吸収部材

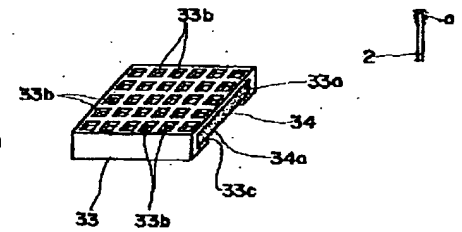
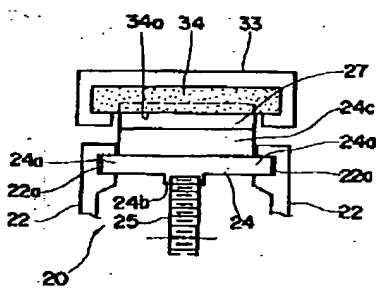
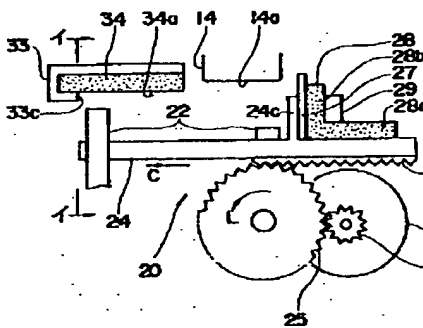
34a インク吸収面

【図1】

【図2】

【図3】

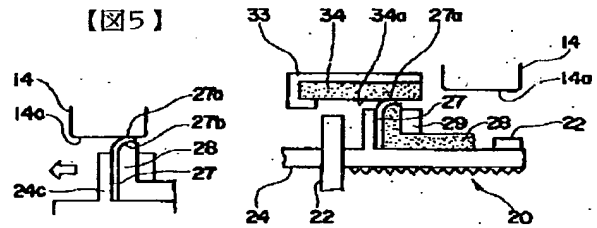
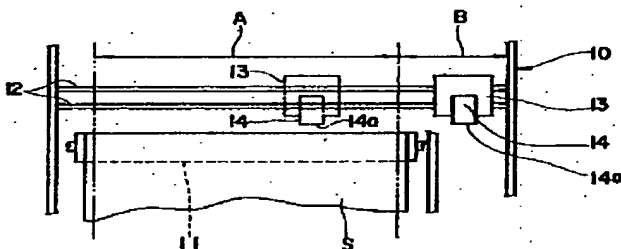
【図9】



【図4】

【図6】

【図5】

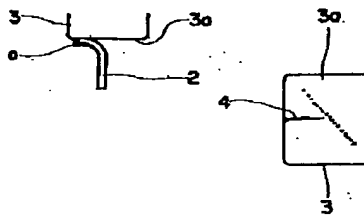
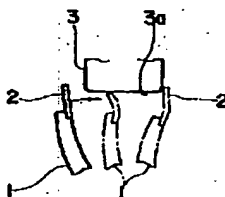
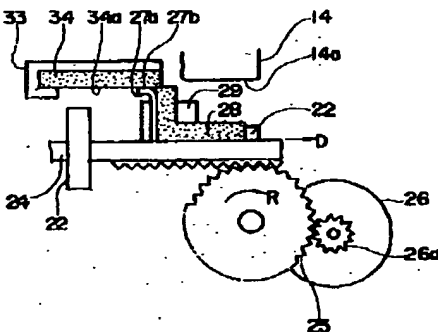


【図10】

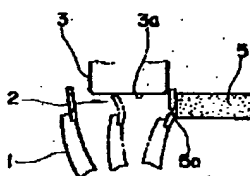
【図11】

【図7】

【図8】



【図12】



**WEST**

Generate Collection

L4: Entry 17 of 183

File: JPAB

May 24, 1994

PUB-NO: JP406143597A

DOCUMENT-IDENTIFIER: JP 06143597 A

TITLE: HEAD SURFACE CLEANING DEVICE FOR RECORDING HEAD

PUBN-DATE: May 24, 1994

## INVENTOR-INFORMATION:

NAME

SASAKI, TORU

## ASSIGNEE-INFORMATION:

NAME

RICOH CO LTD

COUNTRY

N/A

APPL-NO: JP04328521

APPL-DATE: November 13, 1992

US-CL-CURRENT: 347/31; 347/33

INT-CL (IPC): B41J 2/165

## ABSTRACT:

PURPOSE: To completely absorb ink adhered to a wiper without remaining after a head surface of a recording head of an ink jet recorder is cleaned with the wiper.

CONSTITUTION: A slider 24 is so provided on a nonrecording area of a printer body by supporting to a frame 21. The slider 24 has a mounting protrusion rising on an upper surface, a wiper 27 mounted in contact with its one side, a toothed part 24b formed on a lower surface to be engaged with a pinion 25. A motor gear 26a of a pulse motor 26 is engaged with the pinion 25. On the other hand, an ink absorbing member 34 is provided by supporting to a holder 33 forward of the wiper 27 in a reciprocating direction, and its ink absorbing surface 34a is disposed in parallel with the moving direction of the wiper 27. The wiper 27 is moved to clean a head surface 24a of a recording head 14, and ink adhered to the wiper 27 is absorbed by bringing the wiper 27 into slide contact with the surface 34a.

COPYRIGHT: (C) 1994, JPO&amp;Japio

**WEST****End of Result Set**

Generate Collection

L2: Entry 1 of 1

File: JPAB

May 24, 1994

PUB-NO: JP406143597A

DOCUMENT-IDENTIFIER: JP 06143597 A

TITLE: HEAD SURFACE CLEANING DEVICE FOR RECORDING HEAD

PUBN-DATE: May 24, 1994

## INVENTOR-INFORMATION:

NAME

SASAKI, TORU

## ASSIGNEE-INFORMATION:

NAME

RICOH CO LTD

COUNTRY

N/A

APPL-NO: JP04328521

APPL-DATE: November 13, 1992

US-CL-CURRENT: 347/31; 347/33

INT-CL (IPC): B41J 2/165

## ABSTRACT:

PURPOSE: To completely absorb ink adhered to a wiper without remaining after a head surface of a recording head of an ink jet recorder is cleaned with the wiper.

CONSTITUTION: A slider 24 is so provided on a nonrecording area of a printer body by supporting to a frame 21. The slider 24 has a mounting protrusion rising on an upper surface, a wiper 27 mounted in contact with its one side, a toothed part 24b formed on a lower surface to be engaged with a pinion 25. A motor gear 26a of a pulse motor 26 is engage with the pinion 25. On the other hand, an ink absorbing member 34 is provided by supporting to a holder 33 forward of the wiper 27 in a reciprocating direction, and its ink absorbing surface 34a is disposed in parallel with the moving direction of the wiper 27. The wiper 27 is moved to clean a head surface 24a of a recording head 14, and ink adhered to the wiper 27 is absorbed by bringing the wiper 27 into slide contact with the surface 34a.

COPYRIGHT: (C)1994, JPO&amp;Japio

142